

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Improvements in or relating to Nuts

I, JOHN POLLARD DENNIS, of "The Heys",
Caldy, Wirral, Cheshire; a British subject,
do hereby declare the invention, for which I
pray that a patent may be granted to me,
5 and the method by which it is to be per-
formed, to be particularly described in and
by the following statement: —

The present invention concerns nuts for
use in attaching a screw threaded item, e.g.
10 a bolt, to a slotted member, e.g. a member
having a partial box section or a slotted
plate.

An object of the invention is to provide
15 a nut which is easily positioned in a slot
and is capable of being self retained at a
selected position especially when the slot ex-
tends vertically.

The present invention consists in a nut for
use in attaching a screw threaded article, such
20 as a bolt, to a slotted member, said nut
having a nut body of elongated rectangular
shape which either includes or has attached
thereto an element which overlies an elongated
25 rectangular face of the body on both
sides of the bore therethrough to form gaps
extending transversely to the longitudinal body
axis, in which gaps the edges of a slot in a
said slotted member may engage to retain
30 the said nut in a chosen position prior to or
during screwing of the article thereto.

The term "rectangular" is intended to mean
rectangular in plan, which is to say rectan-
gular as viewed along the axis of the nut
body bore.

35 Advantageously the said element is resilient.
The said element may be of sheet material
or, as in one preferred embodiment of the
invention, the element may be made from a
hardened steel wire spring, which embraces
40 the nut body. Conveniently this wire spring
is secured in a slit or hole in the nut body
so that the element and body are not readily
separated in use or prior to use e.g. by un-
skilled operatives.

[Price

The nut body is advantageously but not
essentially provided with longitudinally ex-
tending teeth on its said elongated face so
that when tightened the nut body forms a
positive key against its possible displacement
relative to the slotted element. 45

A slotted member and nut body such as
the angle section and nut of the constructional
building or engineering elements described in
the specifications of patents Nos. 782,428 and
853,581 may conveniently be used. 50

One form of slotted member which may
conveniently be used with a nut in accord-
ance with the invention consists in a box
section having corrugated sides and flanges.
Such a section may advantageously be made
of relatively thin gauge sheet material and
can be arranged to have a centre of strength
at approximately the intersection of its
diagonals. 55

The invention will be described further by
way of example, with reference to the draw-
ings accompanying the provisional specification
and in which: —

Fig. 1 is a section, partly in elevation, show-
ing one embodiment of a nut, in accordance
with the invention, in its relationship to a
slotted member and screw-threaded item, the
bracket or the like to be fixed to the slotted
member being omitted for the sake of clarity; 60

Fig. 2 is a section, partly in elevation,
showing another embodiment of a nut in
accordance with the invention, in its relation-
ship to a slotted member, other parts being
omitted for the sake of clarity; 65

Fig. 3 is a fragmentary plan corresponding
to Fig. 2; and

Fig. 4 is a fragmentary perspective view
of a slotted member with which a nut accord-
ing to the invention may be used.

In the embodiment of Fig. 1 the outer-
most end of the elongated nut body 11 is
provided with two parallel longitudinally ex-
tending teeth 11a, one only of which is to 85

be seen in Fig. 1 but both of which are visible in Fig. 3, the embodiments of the two Figures being similar in this respect. When the nut is tightened, these teeth form a positive key with the material of the slotted member. A chamfer or bevel 11b is provided at each side of the nut body to permit the nut body to rotate into a locking position relative to the inner vertical faces of a partial box section slotted member such as that shown in the Figures and referenced generally 12. The nut of Fig. 1 includes an element 13 of sheet steel, preferably hardened, to bite into adjacent surfaces when the nut is tightened. The said element has depending lugs 13a passing around the front and rear faces of the nut body 11 and being bent upwards to lie flush with the lower surface (not visible in the Figures) of the nut body. The said lugs 13a terminate on the said lower surface just short of making contact with the bolt 14 which penetrates the nut body from its upper to its lower surface via the nut bore. The engaging element 13 has two lateral flaps 13b which extend in the longitudinal direction of the elongated nut body and are adapted to bear on the outer slot-adjacent surfaces 12a of a member 12 when the nut as a whole is turned so that its length lies across the slot width.

In the embodiment of Figs. 2 and 3 a detachable and preferably hardened, wire element 23 is utilised in place of the sheet element 13. The said wire element 23 is in the form of a closed loop which is bent as shown in the said Figure, the position of the wire beneath the nut in Fig. 3 being shown in dotted lines.

Fig. 4 shows a form of slotted member which has a centrally disposed centre of strength and is especially susceptible to manufacture in light gauge sheet metal because of the various flanges incorporated therein which render it particularly bend-resistant.

45 WHAT I CLAIM IS:—

1. A nut for use in attaching a screw threaded article such as a bolt, to a slotted member, said nut having a nut body of elongated rectangular shape which either includes or has attached thereto an element

which overlies an elongated rectangular face of the body on both sides of the bore therethrough, to form gaps extending transversely to the longitudinal body axis, in which gaps the edges of a slot in a said slotted member may engage to retain the said nut in a chosen position prior to or during screwing of the article thereto.

55 2. A nut as claimed in claim 1 wherein the said element is resilient.

60 3. A nut as claimed in claim 1 or 2, in which said element is made integral with the nut body.

65 4. A nut as claimed in claim 1 or 2, in which the said element is of sheet material.

70 5. A nut as claimed in claim 1 or 2 in which the outer surface engaging element is in the form of a bent wire.

75 6. A nut as claimed in claim 1, 2, 4 or 5 in which the said element is of material which is harder than the material of the nut body.

80 7. A nut as claimed in claim 6 when appendant to claim 5 in which the element is made from a hardened steel spring wire.

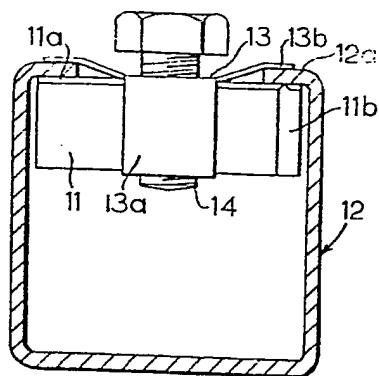
85 8. A nut as claimed in claim 7, in which the wire spring is secured in a slit or hole in the nut body so that the element and body are not readily separated in use or prior to use.

90 9. A nut as claimed in any preceding claim, in which the said elongated face of the nut body is provided with longitudinally extending teeth.

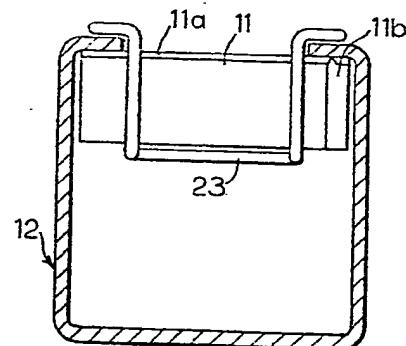
95 10. A nut for use in attaching a screw threaded item to a slotted member, substantially as described herein with reference to and as illustrated in Fig. 1 or Figs. 2 and 3 of the drawings accompanying the provisional specification.

11. A combination of a nut as claimed herein and a slotted member substantially as described herein with reference to and as illustrated in Figs. 1, 2, 3 and 4 of the drawings accompanying the provisional specification.

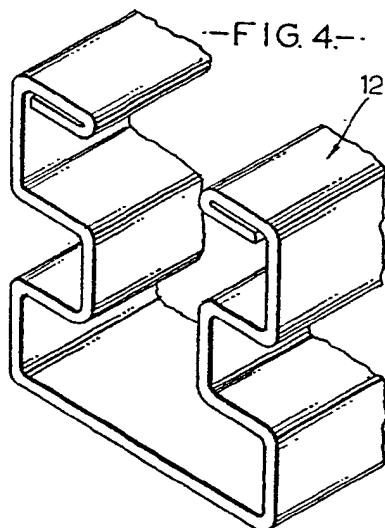
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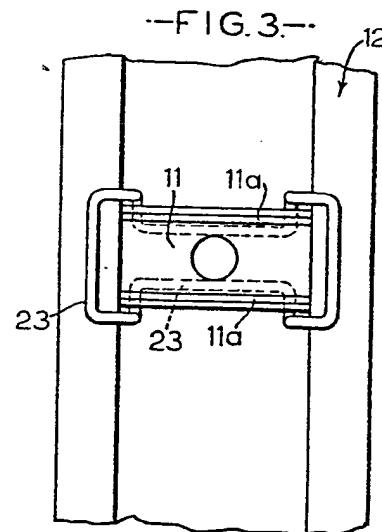
—FIG. 1—



—FIG. 2—



—FIG. 4—



—FIG. 3—